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ABSTRACT

The role of survey data in assessing teacher supply, demand, and shortage is illustrated through a description of the Schools and Staffing Survey (SASS) of the National Center for Education Statistics. This survey exemplifies a method that involves: (1) a sample survey; (2) representative surveys; (3) cross-sectional surveys; and (4) comprehensive and national surveys. The SASS was administered for the first time in the 1987-88 school year. Its four questionnaires--the Teacher Demand and Shortage Questionnaire, the Administrator Questionnaire, the School Questionnaire, and the Teachers Questionnaire--supplemented by the Teacher Followup Survey will permit assessment through either prevalence or market based models. The complex question of teacher attrition can be addressed through a framework for analysis termed the "Comprehensive Attrition Model," developed from SASS data to consider transfer attrition and exit attrition. Survey research can also measure many of the factors affecting the magnitude of teacher supply. Limitations to the usefulness of the survey method in the areas of cost, errors, and forecasting are reviewed. The considerable relevance and utility of survey research methodology do not mean that other methods for studying and projecting teacher supply and demand are superfluous. Three tables present information about survey research. (SLD)

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# ANALYZING TEACHER SUPPLY AND DEMAND:

# THE ROLE OF NATIONAL SURVEY DATA[1]

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## Introduction

Survey research is a powerful tool for studying a wide range of problems. Because there are many varieties of survey research, it is important at the outset to specify the particular type addressed in this paper. Specifically, the characteristics of the survey method referred to here are as follows:

1. Sample surveys, not population surveys;
2. Representative surveys, not unsystematic informal surveys;
3. Cross sectional surveys, not longitudinal surveys; and
4. Comprehensive national surveys, not narrowly-focused local surveys.

The role of survey data of this type in assessing teacher supply, demand, and shortage is best illustrated with the Schools and Staffing Survey of the National Center for Education Statistics, hereafter referred to as SASS. In fact, SASS is the only comprehensive survey data base available which includes a remarkably wide variety of variables essential to assessing the supply, demand, and shortage of elementary and secondary teachers in the United States. Following a brief description of SASS, the utility of the survey method will be described by reference to it.

## The Schools and Staffing Survey (SASS)

The Schools and Staffing Survey was administered for the first time during the 1987-88 school year. It was composed of four basic questionnaires, with minor variations for units in the public and private sectors, as shown in Table 1 along with other basic descriptive information.

**Teacher Demand and Shortage Questionnaire**. This survey of public school districts and private schools concentrated on demand for and shortages of teachers, and on a variety of policies affecting demand and shortage.

**Administrator Questionnaire**. This survey of school principals concentrated on their background characteristics and qualifications, and their perceptions of school conditions.

**School Questionnaire**. This survey of schools concentrated on programs, policies, and conditions, student characteristics, and staffing patterns and turnover.

Table 1

Schools and Staffing Survey (SASS)

| Questionnaire | Public | Private | Both |
|---|---|---|---|
| 1. Teacher Demand and Shortage | X | X | |
| 2. Administrator | | | X |
| 3. School | X | X | |
| 4. Teacher | X | X | |

Sample Size

| 1. Public Sector | 2. Private Sector |
|---|---|
| A. 5,600 Districts | A. - - - |
| B. 9,300 Schools | B. 3,500 Schools |
| C. 9,300 Principals | C. 3,500 Principals |
| D. 52,000 Teachers | D. 13,000 Teachers |

Samples Representative Of

1. Public and private schools, principals, and teachers nationally.
2. Elementary and secondary education levels nationally.
3. Each state in the public sector.

**Teachers Questionnaire**. This survey of teachers concentrated on their demographic and socioeconomic characteristics, their qualifications and teaching assignments, working conditions, and perceptions of school conditions.

SASS was designed so that schools were the primary sampling unit. Once a school was selected for the sample, the principal of that school was selected for the Administrator Questionnaire and a sample of four to eight teachers from that school was selected for the Teacher Questionnaire. Finally, in the public sector, the district in which the school was located was selected for the Teacher Demand and Shortage Questionnaire. This design, therefore, permits the linking of data from one questionnaire to another. For example, teachers' perceptions of school conditions can be compared with the perceptions of the principals of their schools. As another example, teacher attrition from schools can be analyzed from the perspective of district policies relevant to teacher demand and shortage.

SASS was administered in the form of mail questionnaires, with extensive telephone followup. Consequently, questionnaire response rates were high - on the order of 90% in the public sector and 80% in the private sector.

SASS also has a small but important longitudinal component termed the Teacher Followup Survey. During Spring 1989, one year after the base survey, all 2500 teachers who left the teaching profession at the end of the 1987-88 school year were sent the Questionnaire for Former Teachers. In addition, a representative sample of approximately 4700 teachers who remained active in the profession were sent the Questionnaire for Current Teachers. This latter group was subdivided equally into (a) teachers who remained in the same school and (b) teachers who transferred to a different school. The response rate for this survey was 93% for teachers who left and 97% for teachers who remained in the profession.

The Teacher Followup Survey, linked with SASS, will permit, for the first time at the national level, the study of attrition from the profession of a representative sample of teachers. Furthermore, three further followup surveys of these teachers are planned for 1992, 1993, and 1995. Consequently, it will also be possible to study, from a national perspective, reentry to the profession of experienced teachers from the reserve pool.

## Assessing Teacher Supply, Demand, and Shortage

Data needed for assessing teacher supply, demand, and shortage (or surplus) depend, in part, on the type of model to be used. Smull and Bunsen (1989) defined two alternative model types: (a) a Prevalence Based Model in which demand is driven by the size of the student population and a

prespecified teacher/student ratio, and (b) a Market Based Model in which demand is driven by the number of funded teaching positions. An example of the prevalence type is the MISER Model (Coelen & Wilson, 1987), while an example of the market type is the New Hires Model (Lauritzen, 1989).

Data generated by SASS is relevant to both prevalence and market based models. First, it includes a wealth of information about sources of teacher supply, factors common to both types of models. Secondly, it includes information about student-teacher ratios, a vital component of demand in prevalence based models. Finally, it includes information about teaching positions, both filled and unfilled, which are vital components of market based models. Since SASS includes all factors required to assess teacher supply, demand, and shortage from the perspective of market based models, this framework will be used in the following sections of this paper.

## Teacher Supply

The main source of teacher supply, in any one year, is experienced teachers continuing from the previous year. This large stable group is augmented each year by a supply of new teachers that, from a national perspective, comes mainly from two sources.[1] The first is recent college graduates; the second is the reserve pool composed of experienced teachers and inexperienced certificate holders who have delayed their entry to teaching. SASS provides detailed information about these two sources of new teachers. For example, the educational history of all current teachers is recorded, thereby providing information on who graduated with what degrees in what majors during the preceding year. For new teachers entering from the reserve pool, information is available on their primary activity during the preceding year, such as employment in a noneducation position, child rearing, or attending college. Their length of time away from teaching is also recorded.

Viewed from a local or state (as distinguished from national) perspective, there is a third source of "new" teachers; namely, the transfer of active teachers from other schools and/or from other teaching specializations. This source is here termed "transfer supply," and is broken down into two main factors: (a) school transfer and (b) subject matter specialization transfer. For example, the supply of new mathematics teachers in a particular school may include school transfer in which a mathematics teacher from a different school transfers in. Likewise, the supply of new mathematics teachers in a particular school may include specialization transfer in which a chemistry teacher changes to a primary assignment in mathematics. Of course, it is also possible for a new mathe-

[1]Two minor sources of new teachers not accounted for here are (a) immigrants of qualified teachers from other countries and (b) individuals not formally qualifying who first enter teaching by alternative routes. The alternative route source is currently being developed and enlarged by state and federal policy makers.

matics teacher in a particular school to have simultaneously transferred from a different school and from a different specialization. From a national perspective, of course, transfer supply does not add to the total supply of active teachers; it merely represents a reshuffling of the deck.

The richness of SASS data permits analysis of this two-factor framework for transfer supply. It is illustrated here in Table 2. A particular advantage of survey data such as SASS is that it permits the construction of the teacher transfer supply table for the nation as a whole. Data bases maintained by a school district or state are unlikely to be so complete even for their own in-transfers. SASS further permits an analysis of comprehensive cross-state teacher transfers in the form of a 50X50 matrix.

Thus, a complete tabulation of the four main categories of public school teacher supply (i.e., continuing active teachers, new college graduates, reserve pool, and transfer of active teachers), state-by-state and for the nation as a whole, can be computed from SASS data as of 1987-88. A similar analysis can be made of teachers in the private sector, and of teachers transferring between the public and private sectors. A complete crosstabulation of all these variables simultaneously is not feasible, however, because the number of cells involved would split the SASS teacher sample so finely that the number of teachers in most cells would be too small to support reliable inferences. Nonetheless, a large number of interesting, useful, and reliable tabulations and crosstabulations of these variables can be made.

### Teacher Demand and Shortage

In terms of the Market Based Model, the <u>total</u> demand for teachers at the beginning of a school year is defined by SASS as the number of full-time equivalent (FTE) teaching positions approved. This total demand can be subdivided into satisfied and unsatisfied (i.e, shortage) demand, as follows:

<u>Satisfied Demand for Fully Qualified Teachers</u>

Total FTE teaching positions filled by teachers holding regular or standard state certification in their fields of assignment.

<u>Shortage of Fully Qualified Teachers</u>

The number of FTE teaching positions accounted for by less than fully qualified teachers, as follows:

1. The number of FTE teaching positions filled by teachers holding probationary, provisional, temporary, or emergency state certification in their fields of assignment.
2. The number of FTE teaching positions filled by substitute teachers, or left vacant.
3. The number of FTE teaching positions withdrawn because a suitable candidate could not be appointed.

Table 2

Two-Factor Framework for Teacher Transfer Supply

| Transfer Supply: School Site Factor (1986-87) | Subject Matter Special. (86-87) | Transfer Supply: Subject Matter Specialization (1987-88) Read | Math | Chem | TESL | SpED |
|---|---|---|---|---|---|---|
| 1. Same School | Read | X | | | | |
| | Math | | X | | | |
| | Chem | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 2. From Different School: Same District | Read | X | | | | |
| | Math | | X | | | |
| | Chem | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 3. From Different School: Different District In-State | Read | X | | | | |
| | Math | | X | | | |
| | Chem | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 4. From Different School: Different District Out-Of-State | Read | X | | | | |
| | Math | | X | | | |
| | Chem | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |

NOTES:
1. Diagonal cells (Xs) represent stability from year-to-year in subject matter field, while other cells in a column represent transfer supply from different specializations.
2. Teachers classified in the diagonal cells (Xs) of "Block 1: Same School" represent the large stable teaching force which continues to teach in the same specialization in the same school.
3. Teachers classified in Blocks 2, 3, and 4 during the prior year (1986-87) represent sources of transfer supply from different school sites. Those classified in non-diagonal cells of these blocks represent combined specialization and school site transfer supply.
4. Five subject matter specializations have been selected here to illustrate the specialization transfer supply matrix. Since SASS identifies 32 distinct teaching specializations, a much larger matrix with up to 27 additional specializations can be analyzed.

Though this definition of teacher shortage is reasonable, a few minor qualifications should be noted. First, the classification of teachers with probationary certificates (those who have completed all requirements for a regular or standard state certificate except for the completion of a probationary period) might better be regarded as fully qualified for this purpose, as was the case in the 1983-84 Survey of Teacher Demand and Shortage of the Center for Education Statistics (Sietsema, 1987). Secondly, a teacher fully qualified in a different state, who has recently transferred to a new state, may be in the process of qualifying for a regular or standard certificate in that new state. The Teacher Questionnaire of SASS can provide an estimate of the magnitude of probationary certificated teachers, while it has no information on the prior certification of teachers who transfer across state lines.

Nonetheless, useful estimates of total FTE teacher demand and shortage can be made from SASS data for the nation as a whole, for each state, and for both the public and private sectors. In addition, the design of SASS provides for estimates of FTE teacher demand and shortage at the elementary and secondary levels, and for over 20 different teaching subject areas. Unfortunately, the item response rates were unacceptably low for the unusually complex questionnaire items seeking this detailed information.

### Attrition: A source of Demand for New Teacher Hires

While the measurement of overall teacher shortage within the Market Based Model is straightforward, the explanations for shortages, especially shortages in specific teaching subject areas and in particular localities, is more complex. Shortages exist when the demand for new teacher hires exceeds available supply. The components of demand for new hires are commonly identified as increments in student enrollment, decrements in the teacher/pupil ratio, and teacher attrition, of which teacher attrition is by far the dominant consideration (Haggstrom, Darling-Hammond, and Grissmer, 1988).

Teacher attrition itself is a complex phenomenon which has been analyzed and modeled by several researchers (e.g., Grissmer & Kirby, 1987). The wealth of relevant data from the base 1987-88 SASS and its Spring 1989 companion, the Teacher Followup Survey, makes possible the first extensive analysis of teacher attrition from a national perspective. To capitalize on these data, the author has formed a framework for analysis termed the "Comprehensive Attrition Model", outlined next. This comprehensive model will be related to data available from SASS.

## The Comprehensive Attrition Model (CAM)[2]

In CAM, teacher attrition is first subdivided into two basic types:

1. Transfer Attrition, which refers to teacher transfer be-tween teaching specializations and/or schools.
2. Exit Attrition, which refers to leaving the teaching profession for some other activity.

The first basic type, transfer attrition, is further subdivided into two factors: (a) transfers between teaching specializations, and (b) transfers between schools. The main components of each transfer factor are as follows:

1. Specialization Transfer involves either:
   a. Transfer from one specialization in a field of teaching to another specialization in the same field (e.g., transfer from biology to chemistry in science education, or transfer from one specialization to another in special education); or
   b. Transfer from one field to another (e.g., transfer from special education to science education).
2. School Transfer involves either:
   a. Transfer to a different school in the same district; or
   b. Transfer to a school in a different district in-state; or
   c. Transfer to a school in a different district out-of-state; or
   d. Transfer to a private school.

This two-factor framework for transfer attrition can best be conceptualized as a two-dimensional table with the rows defined by four levels of school transfer and the columns defined by teaching specializations nested within teaching fields (insofar as appropriate), as shown in simplified form in Table 3. Transfer to private schools, for example, could be added as a fifth horizontal block. Because space is limited, only five columns representing teaching fields and specializations are shown. In SASS, chemistry is actually one of five teaching assignments within the field of science education. Special education, a teaching field, could be broken down into several specializations. In all, SASS provides data on 32 teaching specializations, and makes possible the comprehensive analysis of transfer attrition described here.

Table 3 provides for the possibilities of school transfer attrition without specialization transfer, specialization transfer attrition without school transfer, and simultaneous school and specialization transfer attrition. In addition to illustrating these many transfer attrition possibilities, Table 3 includes the stable continuing teaching force in the diagonal of the specialization transfer

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[2]CAM, as presented here, is developed with respect to teachers in public schools. It could easily be elaborated further to account for teachers in private schools, and private school teacher data in SASS will support analysis of teacher attrition in the private school sector.

Table 3

Two-Factor Framework for Teacher Transfer Attrition

| Transfer Attrition: School Site Factor (1987-88) | Subject Matter Special. (87-88) | Transfer Attrition: Subject Matter Specialization (1986-87) Read | Math | Bilg | TESL | SpED |
|---|---|---|---|---|---|---|
| 1. Same School | Read | X | | | | |
| | Math | | X | | | |
| | Bilg | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 2. To Different School: Same District | Read | X | | | | |
| | Math | | X | | | |
| | Bilg | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 3. To Different School: Different District In-State | Read | X | | | | |
| | Math | | X | | | |
| | Bilg | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |
| 4. To Different School: Different District Out-Of-State | Read | X | | | | |
| | Math | | X | | | |
| | Bilg | | | X | | |
| | TESL | | | | X | |
| | SpEd | | | | | X |

NOTES:
1. Diagonal cells (Xs) represent stability from year-to-year in subject matter field, while other cells in a column represent transfer attrition from different specializations.
2. Teachers classified in the diagonal cells (Xs) of "Block 1: Same School" represent the large stable teaching force which continues to teach in the same specialization in the same school.
3. Teachers classified in Blocks 2, 3, and 4 during the prior year (1986-87) represent sources of transfer attrition to different school sites. Those classified in non-diagonal cells of these blocks represent combined specialization and school site transfer attrition.
4. Five subject matter specializations have been selected here to illustrate the specialization transfer attrition matrix. Since SASS identifies 32 distinct primary teaching fields, a much larger matrix with up to 27 additional specializations can be analyzed.

attrition matrix of "Block 1: Same School." It is also interesting to compare Table 3 (Teacher Transfer Attrition) with Table 2 (Teacher Transfer Supply) because transfer attrition from one sch or specialization becomes transfer supply for the receiving school or specialization, and vice versa The enormous advantage of tracking these teacher transfers from national survey data is that cross-state transfers are identified as such. From district or state data, out-of-state transfers may appear to be exit attrition instead of transfer attrition.

In contrast with transfer attrition, exit attrition is subdivided into the five following activiti of teachers who have left the profession:

1. Employment in a non-teaching education position;
2. Employment in a non-education position;
3. Return to student status in higher education;
4. Homemaking and/or child rearing; or
5. Retirement, death, or other.

The study of teacher exit attrition is made possible by the Teacher Followup Survey of Spring 1989 which was administered to the 2500 teachers in the base SASS who exited the profes- sion at the end of the 1987-88 school year. This survey questionnaire was completed by 93% of a teachers in the SASS sample who left the profession. In addition to determining their primary ac- tivity after leaving teaching, it obtained information about their post-teaching income, their plans fo the immediate future (including returning to teaching), their plans for returning to teaching in the intermediate future, their reasons for leaving teaching, their dissatisfactions with teaching, and thei opinions about working conditions in their new jobs in comparison with their former teaching positions. Furthermore, through linking these followup survey data with information contained in four different surveys of the base SASS, the analysis of exit attrition can be expanded to include a wide range of additional considerations such as variations in work loads and personnel policies.

### Parameters Affecting Teacher Supply, Demand, and Shortage

A large number of known and unknown factors affects the magnitudes of teacher supply, demand, and shortage. Fortunately, many of these factors can be measured by survey research. A few of the more important factors included in SASS data are described in the following paragraphs

**Teacher Certification Status**. Teacher shortage is a function of the certification status of prospective new hires. New teachers hired with less than full certification are commonly thought t to alleviate the shortage problem, but to be a temporary stopgap measure. Because SASS obtains detailed information, variations in teacher certification status can be related to such variables as teaching field and exit attrition rate.

**Teacher Age**. Teacher age is a major factor associated with exit attrition rates, with junior and senior teachers exiting the profession at a higher rate than teachers in the middle age range. SASS obtains teacher birth dates.

**Economic Considerations**. The teaching profession is commonly thought to be price sensitive, with higher salaries attracting a larger supply of qualified new hires and prolonging the years in service of active teachers. A more subtle consideration is whether or not a teacher is the primary wage earner in a family. Teachers who are secondary wage earners are less likely to transfer to a different geographic area. SASS obtains a variety of teacher and family income information.

**Sociological Considerations**. Factors such as family structure and number of dependents of teachers are presumed to be related to employment stability. Racial and ethnic characteristics of the student composition of schools can be related to the racial and ethnic characteristics of teachers employed in schools. SASS obtains a variety of such sociological variables.

**Teacher Career Patterns**. Many teachers exit teaching, and later return, sometimes several times. Often this is a function of child rearing activities. SASS contains detailed information on teacher career patterns which can be helpful in understanding portions of teacher exit attrition and teacher supply from the reserve pool.

**Urbanicity of the School Environment**. Teacher shortages, a joint function of high attrition and inadequate supply, are often reported to be accentuated in rural and inner city areas. This and other geographic considerations can be examined with SASS data because it contains information about the urbanicity of the community in which sampled schools are located and about their state and regional locations.

## Evaluation of the Survey Method

The ability of SASS, a sample survey instrument, to generate a wide variety of data needed for the purpose of assessing teacher supply, demand, and shortage, demonstrates that survey research is a powerful tool - as asserted in the opening paragraph of this paper. Lauritzen (1990) identified 13 "obvious data points"[3] central to an analysis of teacher supply and demand. One measure of the relevance of the survey method is that 11 of these 13 data points have been covered in the preceding sections. There are a few limitations to the survey method, however, which are considered next.

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[3]Lauritzen's obvious data points include "teacher attrition, supply of new personnel, the active reserve pool, geographical differences, emergency licenses issued, availability of out-of-state personnel, changes in pupil population, age as it relates to retirement, geographical mobility, career patterns, sociological considerations, and economic factors" (pg.2). Of these data points, only characteristics of the active reserve pool and changes in pupil population are not available in the 1987-88 SASS.

**Cost**. It is commonly held that the survey research method is very expensive. Indeed, it is expensive to conduct high-quality, large-scale survey research because it is highly technical and entails large field and data management operations. The expense, however, must be considered in light of (a) the scope, quality, and utility of the data generated, and (b) the expense entailed in generating like data by other means. Though SASS is a complex, comprehensive, and large-scale national survey that has cost the federal government several millions of dollars, there is no other data base, survey or otherwise, that provides data even approaching its scope and utility. Furthermore, to create such data by other means, such as building 50 separate state data bases and then integrating them into a comparable national data base, would no doubt be much more expensive. Survey data of the scope and complexity represented by SASS are expensive, but are reasonable and worth the cost when alternatives are considered.

**Errors**. Survey data such as produced by SASS are also subject to sampling and reporting errors. A well designed survey with a high response rate and properly prepared data will have low specified sampling errors, and carefully crafted questionnaires with followup checks will reasonably control reporting errors. The technology required to minimize these errors contributes to the high cost of survey research. Errors inherent in survey data must also be considered in relation to errors inherent in data bases produced by other means. No data is error free, and error control is costly no matter what the data collection method.

**Forecasting**. Since cross sectional surveys provide data at one point in time, they are assumed to have limited utility in forecasting trends, such is in teacher supply, demand, and shortage. There are many ways, however, in which such survey data can contribute to forecasting, especially when combined with data from other sources. For example, the annual Higher Education General Information Survey of the National Center for Education Statistics reports the number of graduates in teacher eduction, by specialization, and in other fields. SASS provides national and state estimates of the numbers of these graduates, by specialization, that actually enter the active teaching force upon graduation. This information is central to forecasting the yield of new teachers from among recent college graduates.[4] While many other examples of the utility of cross sectional survey data in contributing to forecasting trends could be given, it should be noted that cross sectional surveys are not necessarily limited to a single administration. SASS, as a major example, is scheduled to be readministered in 1990-91, and every two years thereafter. Successive SASS

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[4]The National Center for Education Statistics also produces similar information from its aperiodic recent College Graduate Study. However, data are not normally reported from this study at the level of detail that would be of maximum use in projecting the yield of new teachers form among recent college graduates, possibly because the size of the sample of new teachers in the survey is much smaller than that in SASS.

surveys will thus be generating its own trend data and, as a package, will serve as a technically sound, comprehensive data base from which a wealth of projections for the teacher labor market can be made.

Though the considerable relevance and utility of survey research data such as from SASS are apparent from this review, one should not conclude that other methods for studying and projecting teacher supply and demand are superfluous. Special topics, such as the extent of the active reserve pool, are not tapped by SASS because it excludes individuals not currently teaching. In addition, states find their own on-line data bases very useful in dealing expeditiously with local policy issues. Finally, the matter of forecasting trends in teacher supply, demand, and shortage is sufficiently complex to benefit from multiple methods, with the strengths and limitations of each being assessed over time as trend data accumulate.

As a final point, it must be noted that the description of SASS data and the illustrations of its analytic potential have only been highlighted here. Detailed information on many more topics is included such as teacher workloads and secondary assignments. It is a remarkably rich and valuable data base on our nation's schools and staffing, and public use data tapes will soon be widely available for secondary analyses.

## References


Coelen, S., & Wilson, J. M. (1987). Report on the status of teacher supply and demand in Massachusetts. Unpublished report, University of Massachusetts, The Massachusetts Institute for Social and Economic Research (MEISER), Amherst.

Grissmer, D. W., & Kirby, S. N. (1987). Teacher attrition: The uphill climb to staff the nation's schools. Santa Monica, CA: RAND Corporation.

Haggstrom, G. W., Darling-Hammond, L., & Grissmer, D. W. (1988). Assessing teacher supply and demand. Santa Monica, CA: RAND Corporation.

Lauritzen, P. (1989). Educational personnel needs assessment: CSPD technical manual (1989 ed.). Unpublished report, University of Wisconsin - Whitewater, CSPD Special Project, Whitewater.

Lauritzen, P. (1990). Evaluation of the methodologies to assess personnel needs in education. Unpublished manuscript.

Sietsema, J. P. (1987). Teachers in elementary and secondary education (CS 87-324h). Washington, DC: Center for Education Statistics.

Smull, M. W., & Bunsen, T. (1989). Projecting the need for special education teachers: A concept paper. Unpublished manuscript, Office of Special Education Programs, U.S. Department of Education, Washington, DC.